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Environmental conflict and peacebuilding

An introduction

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The past two decades have witnessed the production of a large body of research work examining the linkage between environmental scarcity, violent conflict, and cooperation. The growing threat of global climate change has also added strength to this area of academic investigation. However, this environmental security polemic is still trying to deliver a well-defined approach to achieving peace. Studies are being undertaken to find the precise pathways by which cooperative actions are expected not only to pre-empt or moderate resource conflicts but also to help diffuse cooperative behavior to other disputed issues. To date there has not been a comprehensive volume covering environmental conflict and peacebuilding. This handbook aims to rectify that by providing a state-of-the-art review of research on how utilization of environmental resources can cause conflicts and how it can be a catalyst for cooperation and peacebuilding.

The problem addressed in this handbook is anything but trivial. On the one hand, the struggle for limited resources is an age-old cause for conflict, on the other, civilizations and societies are built on cooperation over the same limited resources. Obviously, causality on environmental scarcities and the making of peace goes in both directions. As such the interconnection – and indeed the entire field – remains under-conceptualized and overly complex. This handbook recognizes this complexity and aims to make an inventory of issues and findings in the contemporary research in this field. As such it covers a broad section of views, findings, and experiences on the relation between environmental resources and conflict.

In addition to the issue of causality between environmental stress and conflict and how a limited set of actors approach this rivalry over scarce resources, the issue of limited resources has recently taken on global dimensions through overall unsustainability, global climate change, and the volatility of some particularly scarce and critical resources (such as water, forest, and energy). Thus, there is a now a global and collective concern on how to safeguard access to critical resources and to deal with global climate change. This is a historically qualitatively new dimension to the field of environmental studies. In conflict terms, this global dimension can be seen as a conflict multiplier creating a complex web of interests, rivalries, and vulnerabilities. The unsustainability of contemporary global resource utilization and the accelerating global climate change indicate that there will be severe environmentally related impacts that will increase overall risks and vulnerabilities with distinct actors and areas being particularly jeopardized. Hence security issues have entered the environmental field.

Traditionally, security has been typically defined by threats which challenge it. This attitude has kept the focus of security away from non-military threats that promise to undermine the stability of many countries in the coming years. Trans-boundary environmental issues are gradually beginning to challenge the sacred boundaries of national sovereignty. The end of the Cold War also provided a new opportunity to attain an effective global security system that can address the broader needs of security for the human population and the planet. Global security is only partly dependent upon military power. Environmental stress is one of the major elements among many political, economic, and social factors that contribute to instability and conflict. The global challenges mentioned above have increasingly shown that environmental issues need to be given higher priority.

As Conca and Dabelko argued already in 1998, the global environmental debate rapidly in the post-Cold War period started focusing on "not only economic issues of welfare, production, and livelihood but also political questions of international conflict, violence and geopolitics." For good reasons, this probed the conflictual dimension of environmental changes. Every year, the world population is increasing by 78 million, roughly the equivalent of another Germany. The world population is projected to reach 10 billion around the year 2050. While population growth has stagnated in the industrialized world, it is still extremely high in many developing countries of the South, where more than 90 percent of population growth takes place. Research has found population growth pressure to have a significant impact on the likelihood of a state becoming involved in interstate military conflicts (Swain 2012). It might, however, be a matter of debate whether the population growth directly affects the decision-making of the state to go to war or not (Urdal 2005), but it undoubtedly generates scarcity of resources in developing countries.

Availability of renewable natural resources is increasingly falling short of meeting human needs. The future predictions on population growth and economic activities have brought a distinct possibility of severely crippling the natural resource base on which human beings are dependent for survival. The decline in agriculture, desertification, decreasing green cover, freshwater scarcity, and extinction of species threaten the life and survival of present and future generations. Hence the interconnections between the global environmental resources, security, and violent conflict is a field of growing concern, locally, regionally, and globally.

In the next section we will review the debate on causality between violent conflict and environmental stress (and vice versa), followed by discussions on whether increasing scarcity and accelerating global climate change act as a conflict multiplier or rather as a mechanism for increased cooperation – the latter putting focus on how peacebuilding could be performed in order to trigger this rather than the former which is also discussed.

Violent conflict and environmental stress

Destruction of the environment is commonly seen as a repercussion of violent conflict or conflict-induced migration. Many studies in the post-Second World War period have focused on the environmental consequences of warfare.

Besides the direct adverse effects of conflict on the environment, it is also true that, in some cases, environmental change is carried out as the deliberate objective in conflict rather than being an unwanted by-product. Even in the time of 'peace,' the military preparedness heavily contributes to resource depletion and environmental destruction. The production, testing, and maintenance of conventional, chemical, biological, and nuclear weapons procreate vast amounts of toxic and radioactive substances, which contaminate soil, air, and water (Leaning 2000).

Besides major wars and their preparations, internal civil wars are also a major contributing factor to global environmental destruction (Gurses 2012). Large-scale environmental destruction

has taken place in most parts of Africa, South Asia, and Central America, due to the presence of civil wars in those regions. This is not only a direct impact of warfare but also a result of more complicated connections: for instance, internal violence makes it impossible to develop sustainable agriculture; it leads to massive deforestation and the destruction of wildlife.

Refugee movement is the direct product of political conflicts and its consequences extend beyond the actors involved in the conflict (Swain & Jägerskog 2016). There are more than 21 million people recognized as refugees in the world today. Mentioning the most familiar cases, they originate from Syria, Afghanistan, Iraq, Palestine, Somalia, Burundi, Sri Lanka, Sudan, Western Sahara, Vietnam, Myanmar, and the former Yugoslavia. In most cases, they have moved to their poor neighboring countries. The pressure created by the presence of refugees in receiving countries can be considerable. Aside from their potential threat to the social, economic and political fabric of the host state and society, they can also be a major source of environmental destruction in the areas of their resettlement (Swain & Jägerskog 2016).

The poorest people in society are relatively more dependent for their livelihood on renewable resources and are less capable of following conservation procedures. Refugees, generally belonging to this category of society, are more likely to cause environmental destruction than others. Their uncertain residential status, lack of land ownership and desire to return to their native place reduce their incentive to protect the environment in which they unwillingly find themselves. The refugees' consumption of resources coupled with their unfamiliarity with the local ecosystem often multiplies the harm to the local environment. Three types of environmental destruction are associated with the refugees: deforestation, land degradation, and water pollution (Swain 2012). While the number of international conflicts has been reduced in the past few years, the world is now witnessing an increase of internal conflicts, e.g., civil wars, ethnic conflicts, etc. As a result, the number of refugee movements has increased and simultaneously amplified the threat to the environment in the regions of their settlement.

Environmental stress and violent conflicts

Environmental destruction, while not immediately intuitive, can also be the cause and not merely the consequence or premeditated consequence of violent conflicts. In the last decade, findings of several major research projects have proved that environmental scarcities are already contributing to violent conflicts, particularly in the developing world. Applying different methodologies and studying disparate cases, all these research efforts have tried to establish the conflict-inducing potential of environmental scarcity.

Environmental changes have drastically reduced the availability of cultivable land, green forests, freshwater, clean air, and fish resources. The effects of this reduction are becoming more acute due to the increasing demand for resources to meet the needs of a growing population, and changing consumption behavior. Conflicts over renewable natural resources have grown more potent as demand for essential commodities increases day by day and as the supply-side looks more and more insecure. Most states depend greatly on renewable resources – soil, water, fish, and forests – that sustain much of their economic activity. When one state works for 'development' by acquiring or exploiting more than its share of these resources, it often affects the interests of other states. Conflicts over renewable resources have already shown their presence in most parts of the world.

Besides fisheries, river water resources have the massive potential of bringing various state actors into a conflictual situation. Almost all the major river systems, which are the paramount suppliers of water to mankind, are shared by more than one state. When multiple countries are jointly dependent on the same river systems, upstream withdrawal, damming and pollution may

lead to conflict with downstream countries. There are many interstate conflicts active among the users of international river basins in different parts of the world. Climate change has raised the specter of further flow variation in these rivers, raising the possibilities for further hostility between the disputing riparian countries (Swain 2004).

Threats to basic food supplies of a country have become cause for friction and tensions between countries in the past. Trade embargoes and other forms of political manipulation have been used to get access to food supplies. Due to the increasing loss of arable land in some countries, food production may substantially decline. Under conditions of a changing climate and growing population, the situation may become even more severe. Many developing countries spend more than half of their income on food, which makes them more vulnerable to increased food prices due to production shortfalls. Thus, changes in productivity of major grain importers and exporters may provoke international tensions and conflict (Swain 2012).

Not only scarcity of environmental resources, but also environmentally induced population migration is becoming a source of international conflicts. The loss of living space and source of livelihood due to environmental change could force the affected people to migrate. Environmental changes have already forced a large number of people to move across international borders. This phenomenon has been one of the growing concerns of the international community for some time. Arguably the mass movement of populations may create security concerns for a nation-state. Trans-border environmental migration has several conflict-inducing characteristics between the receiver and sender states (Swain 1996).

There have been several instances of intra-state armed conflict over scarce natural resources. But, armed conflict is not the only logical ending of environmental scarcity. Obviously, many different forms of action may follow from the moment environmental destruction occurs: debate, demonstrations, out-migration, action to remedy the damage, halting or eliminating the sources of destruction, as well as serious conflicts (Wallensteen & Swain 1997b). It might be argued, however, that a government's response is more determining than many other factors. In most of the cases, environmentally induced conflict typically ends with highly generalized recommendations for environmental cooperation, but primarily there is a lack of careful analysis of the specific mechanisms or pathways by which cooperation could be expected to forestall or mitigate conflict (Conca & Dabelko 2002).

Global climate change – an environmental conflict multiplier or process for triggering cooperation?

Several studies show that environmental stress is one main catalyst that creates societal insecurity that may result in conflict (Swain 1993; Gleditsch 1998; Homer-Dixon 2001; Machlis & Hanson 2008). Meanwhile, the relationship between climate change and armed conflict receives more and more attention. It is often assumed that climate change will intensify environmental stress and might even create new conflicts (Salehyan 2008; Lee 2009; Swain 2015).

Climate change is a global environmental problem caused by the build-up of greenhouse gases, particularly carbon dioxide and methane, in the Earth's atmosphere. The world is warming up faster than at any time in the previous 10,000 years. The predicted dramatic sea level rise caused by this climatic change may deprive millions of people of their living space and source of livelihood in the near future. The Inter-Governmental Panel on Climate Change (IPCC) has predicted that sea levels could rise an average rate of 6 centimeters per decade over the next century. A rise of this magnitude will no doubt threaten the densely populated low-lying countries and coastal zones in different parts of the world. Among other foreseeable impacts are increases in tropical cyclones. Increased cyclones would also enhance the risk of coastal flooding.

Climate change can also potentially alter the typical rainfall pattern, which may lead to increased flooding, drought and soil erosion in tropical and arid regions of the world.

The issue of climate change is high on the world's policy agenda at present. Agricultural production may become highly vulnerable to climate change, given the other multiple stresses that affect food systems in the South. Response to climate change can also affect particular societies' cultural norms and social practices related to food production. Moreover, some states and societies are better at formulating adaptation strategies for all aspects of land use practices to safeguard them against the negative consequences of climate change. To address the adverse effects of climate change, the effectiveness and coping abilities of existing institutions matter as well.

Climate change can be linked to conflict in various ways. These include: increased competition over reduced/uncertain water supply, increased competition over agricultural land in the face of reduced crop yields, desertification and rising food prices, large-scale migration as a result of sea level and weather changes, and diminished capacity of governments to provide services to their people in the face of increasing poverty (Lee 2009; Swain 2015). While the exact impact of climate change is not known, it is clear that it will not only impact access to shared resources but also overall availability of resources.

While climate change may not be the sole cause of conflict or large-scale population migration, it is considered a threat multiplier (Raleigh, Jordan, & Salehyan, 2008). Social, economic, and political factors will also affect the vulnerability or resilience of communities. In Africa, the ability to cope with climate change decreases, and the likelihood of conflict increases, as a result of factors that include: poverty, low levels of education/literacy, lack of skills, weak institutions, limited infrastructure, lack of technology and information, limited access to healthcare, poor access to resources, over-exploitation of resources, etc. Climate change is likely to exacerbate many of these problems.

Environmental stress exacerbated by global climate change may reduce the availability of natural renewable resources for human consumption. This resource scarcity can potentially cause competition among various groups in society, which may lead to conflicts. Moreover, environmentally induced resource scarcity might also lead to the loss of land or other basic needs that are requisite for survival, which may force the affected population to migrate.

To date studies that have been published in the field of environmental security have typically emphasized the emergence of conflict. However, scarcity could also provide valid explanations for cooperation. As resources dwindle, parties and groups may come to appreciate the necessity of pooling resources, rather than risking their destruction in a serious conflict. Thus, it has been argued that a number of the greatest civilizations have emerged to safeguard joint control over river water for irrigation, drinking, transportation, and production. Dynamic cultures have grown across river resources, like the Indus, Nile, and Euphrates. Thus, water also brings people together. Better use of water, as well as the need to control water, is an important input in joint human construction. Presently, there have been a number of individual cases where there are cooperative arrangements for the better use of available water resources (Wallensteen & Swain 1997a; Earle et al. 2015). Thus it has been logically compelling to ask why such aspects have been more or less absent from research. A major shift of focus is needed from environmentally induced conflict to environmentally induced peace.

Human survival has always depended on the ability to handle challenges and find solutions, more than simply fighting wars, defeating peoples and conquering territory. In fact, such behavior can help to address problems presently confronting humankind on a global scale. Thus, it is pertinent to ask, not only whether humans can cooperate, but also, *under what conditions* cooperative human behavior might appear. If environmental stress can lead to conflict, it can also bring cooperation. By realizing the dangers and threats of environmental scarcity, groups and

countries may come together and collaborate in pursuit of a common goal. Cooperation is an interactive process, which turns a situation from potentially destructive conflict into a productive one. Cooperation does not only mean that there is an absence of conflict, but it also implies that there is a mutual will to address the conflict through communicative and peaceful means. In other words, cooperation generates willingness among the parties to think creatively about their problems, consider mutual problem-solving mechanisms, and negotiate commitments.

A nation-state is not capable of solving alone many of the environmental problems that it faces. It cannot prevent the destruction of the ozone layer, arrest the adverse effects of greenhouse gases, save endangered species, or even deal with some of its local environmental scarcities on its own. Air pollution, acid rain, water pollution and scarcity in international rivers are transboundary environmental problems that require a higher-level approach to deal with them, be it regional or global. Thus, a wide range of environmental issues requires nothing short of global cooperation (Swain 2012).

Environmental problems have created strong incentives for countries to come together at the global level. The past few decades have seen an explosion of international environmental agreements, ranging from narrow bilateral accords to ambitious attempts at global governance. There is an intensive effort taking place to negotiate international conventions that will handle many of the environmental challenges: at Earth Summit in 1992, the conventions on desertification in 1994, a protocol on Climate Change and convention on international freshwater sharing in 1997. Some of these conferences have resulted on the building of new international institutions.

The 1972 United Nations Conference on the Human Environment, which was held in Stockholm, placed the environment as a whole on the UN agenda. The same year, the UN General Assembly decided to establish the United Nations Environment Programme (UNEP) in Nairobi, Kenya, to encourage and coordinate environmental initiatives among member states and international organizations. UNEP analyzes the state of the global environment and assesses global and regional environmental trends – providing policy advice and early warning information on environmental threats, and promoting international cooperation and action based on the best scientific and technical capabilities available.

Following the Stockholm Conference, a number of international conferences were held in the 1970s under the auspices of the UN to address population, food, water, and housing problems. During and after the Stockholm Conference developed countries displayed a particularly increased interest for environmental issues. This brought suspicion to the minds of many developing countries as they thought the environmental concern might hamper their quest for economic development. The views of developing countries on global environmental issues are dominated by their desire for economic growth and fear of environmental protection costs. International initiatives to build global regimes on ozone depletion, climate change, loss of biodiversity, and conservation of endangered species are regarded by many developing countries as the Northern agenda. The environmental priorities of the developed countries are different: air pollution, scarcity of clean water, desertification of agricultural land, and toxic contamination. However, for most developing countries, economic growth, employment, and overcoming poverty have been the dominant concerns.

To address the doubts of developing countries regarding the UN's environmental initiatives, the UN established the World Commission on Environment and Development. The report of the Brundtland Commission became an intellectual guide for the proceedings at the 1992 United Conference on Environment and Development, held in Rio de Janeiro, 20 years after the Stockholm Conference. The Rio Conference, popularly called the Earth Summit, was attended by representatives from 178 nations. The Earth Summit and its resulting Agenda 21 stressed that achieving the global agenda of environmental sustainability requires the participation of

developing countries as well as industrial nations, and that the North must play a major role in funding investments in sustainable development. Agenda 21 also entrusted particular responsibility to the United Nations system to pursue the idea of sustainable development. As a follow-up, the UN General Assembly, in a resolution in December 1992, created the Commission on Sustainable Development (CSD) to implement Agenda 21.

Since the Earth Summit, the Global Environment Facility (GEF) has become the primary institution through which financial support is provided to developing countries to undertake sustainable development projects. GEF was created in 1990 to provide funds to developing countries to support their environmental projects, which would bring an overall benefit to the globe. It did not provide any support to address localized environmental problems in developing countries. This tri-agency fund brought together the UNEP, United Nations Development Programme (UNDP), and World Bank and it was operated by a combination of grant-aid and low-interest loans.

GEF focuses its attentions upon political barriers that otherwise restrict international environmental cooperation. The South along with a number of nongovernmental organizations (NGOs) have a major input in its decision-making compared to their role in other Bretton Woods institutions. Continuing efforts of the international community since the Stockholm Conference have facilitated some cooperation among countries to address global environmental concerns. However, it has been largely effective in brokering the Paris Agreement in 2015 to manage climate change, which is undoubtedly the worst environmental problem confronting humanity at the present time. The outcome of international efforts through a series of UN-sponsored conferences to manage climate change at the global level has been both effective and ineffective. These conferences have raised global awareness and a generalized commitment to strive for environmentally sustainable development and limiting climate change.

The global community needs to move fast to translate concern for the environment into greater global cooperation. To transform concern to action, there is a need to strengthen international institutions, which possess the capacity to make binding decisions. It is also true that most developing countries are sensitive about compromising their sovereignty for global environmental issues, fearing that they will force a limit to their freedom to determine their own development strategies. To get the support of the South, the developed world should show real concern and undertake several concrete actions to build mutual trust and confidence (Grugel & Hammett 2016).

The serious threat of climate change makes a strong case for increasing international cooperation on environment and development matters. International relations have become significantly more global and interwoven since the beginning of the twenty-first century. The crude power of a state is no longer enough to meet the present challenges. Security defined in military terms is no longer a formula for prosperity and peace. The global environmental challenges affecting world security in this century, such as climate change, desertification, scarcity of clean water, food security, and prospects of massive environmental migration, need global solutions not ill-prescribed state attempts. Nation-states' efforts to address these threats will not succeed without being supported by cooperative action at the international level. The multidimensional nature of climate change and global environmental stress demands that an integrated approach be adopted.

Scrutinizing the literature on cooperation theory in international relations (Haas 1964; Keohane 1984; Nye & Welch 2012) and social capital theory in development studies (Putnam 2004; Swain 2010), it is not difficult to find a strong argument for the general proposition that cooperation over environmental resources between rivaling states can have positive spin-offs for peace in other contentious areas.

There are two pathways for peacemaking over environmental resources. The first path involves transforming the more immediate problems of mistrust, uncertainty, suspicion, divergent interests, and short time horizons that typically accompany conflictual situations. A second pathway, consistent with the broader understanding of peace as the unimaginability of violent conflict, focuses less on narrow, short-term interstate dynamics and more on the broader pattern of trans-societal relations. In other words, cooperation would be pursued as an objective in itself, diffusing from environmental resource across other areas of international interaction. Such "spill-over" advantages of environmentally induced cooperation have been witnessed in different parts of the world (Conca & Wallace 2009; Jensen & Lonergan 2012).

However, there is still a dearth of serious empirical research scrutinizing the types of institutional structures and cooperative approaches that might embody this theoretical potential, particularly at the bilateral level. We are aware that disputing states after signing the resource-sharing agreement might not be genuinely interested in pursuing sustainable resource management policies rooted in environmental and social justice. Rather, their newly acquired rights and legitimacy might simply yield more effective resource exploitation.

Understandably, environmental cooperation does not transpire easily, nor will it have spontaneous peace-diffusing effects when it does take place. Furthermore, the strengthening of state capacity and increased interstate interaction might not always lead to the transformation of state institutions allowing better bilateral relations. In this context, the form of resource-sharing cooperation between disputing states and the way of arriving at it will have significant influence on its peace-diffusing character.

Environmental cooperation may transform mistrust and suspicion among groups to bring opportunities for shared gains and establish a pattern of reciprocity. It can also pave the way for greater interaction, interdependence, and societal linkages. Does environmental cooperation always provide peace-enhancing effects? It is possible that national sovereignty and self-interest maximizing actors may act as obstacles to the appropriate evolution of environmental cooperation. However, if the stakes are so high, which is the case with many environmental problems, then the logic of cooperation might alter the existing relationship. The diffusion of bilateral cooperation from land and water resources to other areas is being regularly cited in the literature, which supports the environmentally induced peace approach. Establishing a bilateral commitment to share or protect the environment can help to overcome the existing mistrust or suspicion between two disputing countries, and create a milieu of reciprocal gains and estimation of national interests on a long-term basis. Cooperation on environmental issues may also bring people together resulting in trans-border civil society linkages and the building of norms of joint responsibility and bilateral cooperation.

Environmental peacebuilding

Since the end of the Cold War, the international community has been increasingly adopting peacebuilding as strategy for addressing the problems of post-conflict societies (Chandler 2010; Aggestam & Björkdahl 2013). Influenced by 'Democratic Peace' theory, the peacebuilding consensus assumes that liberally constituted societies are more peaceful; thus, the liberal peace has become a guiding norm in reconstructing societies (Mac Ginty 2006; Mandelbaum 2002). In this context, strengthening state capacity, the facilitation of democratic elections and a market economy, and the promotion of human rights, justice, good governance and civil society in post-conflict societies have become the foundations of the international community's intervention in conflict-ridden societies (Paris 2004; Richmond 2004; Öjendal et al. 2015). Several

proponents of this technocratic approach claim that these policies are pursued in order to 'build peace' and 'alleviate human suffering' (Paris 2010; Swain 2016).

In recent years, critics have questioned the practice of liberal peacebuilding on different grounds. Some scholars question the normative assumptions of liberal peacebuilding (Duffield 2007; Swain 2012), seeing it as illiberal, hegemonic, and expansionist behavior of the West. Recently, the outcome of this external interventionism is being described as a hybrid peace that emerges in situations when external and domestic actors engage with each other within externally imposed frameworks (Richmond 2011; cf. Öjendal & Ou 2016). The positivist critique, while subscribing to the overall 'idea' of the liberal peace strategy, is concerned with problems of its implementation and outcomes and focuses on improving policy solutions that make up the strategy. Some prominent suggestions include: focusing on institution-building before allowing electoral competition in order to overcome societal divisions (Paris 2004); facilitating coordination among stakeholders (Paris & Sisk 2009); effective reforming of the security sector (Nilsson 2008), formulating a new constitution (Samuels 2009); and bringing balance in international and local participation in liberal peacebuilding projects (Richmond 2009). In recent years, the debate has shifted beyond hybridity. Some studies point out the resilience of local responses and strategies to external impositions of ideas and order (Hughes, Öjendal, & Schierenbeck, 2015). There have also been attempts in understanding the alternative spaces where locally driven peace is established outside the externally determined formal frameworks (Björkdahl & Höglund 2013). Undoubtedly, over the past two decades peacebuilding strategy and our understanding of what peace may entail have evolved into new concepts and operations. But have they been able to achieve the principal objectives, i.e., to prevent the start or resumption of violent conflict by creating a sustainable foundation for peace?

Peacebuilding strategies cannot eradicate all of the root causes of violent conflict. However, as Matthew (2014) points out, they now primarily aim at identifying and delivering the technical and non-technical capacities that a post-conflict country lacks and that are needed as the platform for recovery, stability, and sustainable development. In spite of learning and evolution, peacebuilding in post-conflict societies still fails to a large extent (Paris 2004; Swain & Krampe 2011; Mac Ginty & Sanghera 2013) due to narrowly defined development goals and the neglect of sustainability during post-conflict reconstruction. Peacebuilding strategies today are dominated by a neoliberal agenda that favors situational short-term economic growth solutions over long-term environmental and resource availability concerns. The significant overlap between countries with heightened vulnerability to resource availability and countries coming out of war provides a prima facie case for suggesting that integrating environment in peacebuilding activities might be prioritized. There can be no durable and sustainable peace if natural resources that sustain livelihoods and the ecosystem are destroyed or degraded (Brown 2013). Analysis of intrastate conflicts over the past six decades suggests that conflicts associated with natural resources are twice as likely to revert to conflict in the first five years. Nevertheless, less than a quarter of peace negotiations aiming to settle conflicts linked to natural resources have addressed resource management mechanisms (Binningsbø & Rustad 2008). This is highly surprising and a state of affairs that is not satisfactory.

Machlis and Hanson (2008: 734) see that the governance of environmental resources at the core of post-war efforts, "could help avert resource conflicts, reduce degradation of war-dominated ecosystems, and increase postwar restoration of ecosystem services, thereby encouraging peace and security." Environmental resources bear the potential for a swift economic recovery, while equally being considered triggers for conflicts if not managed smartly (Lujala & Rustad 2012). Jensen and Lonergan (2012: 9) conclude from over 20 case studies that "integrating natural resource management and environmental sustainability into peacebuilding" is the

way to avert uncontrolled exploitation in the aftermath of conflict. The emerging argument in peacebuilding is that taking environmental issues into post-conflict peacebuilding policies will contribute to sustainable peace.

Decisions about the restoration, management, and protection of natural resources are considered to have vital consequences for short-term stability, long-term sustainable development, and successful peacebuilding (Jensen & Lonergan, 2012). However, political success of post-conflict reconstruction interventions and subsequent peacebuilding invariably lead to crude exploitation of natural resources, unsustainable environmental practices, and massive threat to resource-based local livelihoods. In fact, it would be hard to find even a single case among the several dozens of cases since the end of the Cold War where intervention followed by liberalization and (typically shallow) democratization have not produced a period of drastic resource exploitation, often driven by, and to the benefit of, external actors (Jensen & Lonergan 2012).

So, repeatedly, peace agreements, post-conflict reconstruction, and peacebuilding at large are pursued from short-term urgency, producing long-term unsustainability. Every state, including the ones recovering from a period of violent conflict, needs to both use and protect its vital natural resources such as water, land, and forest. The recognition that these environmental resources can contribute to the re-emergence of violent conflict accentuates the imperative of addressing the resource curse of peacebuilding at an early stage and finding strategies, mechanisms, and institutions which can prevent the far too common resource exploitation, environmental degradation, and broken livelihood systems which usually follow (Matthew, Brown, & Jensen 2009).

The structure of the handbook

The handbook contains 22 chapters besides this introductory chapter, which has introduced the concepts and provided an overview of the historical development of research in the field. In Part I, Review of the Concept and Theories, there are five chapters to review the developing theoretical concepts of environmental conflicts and cooperation, challenges of global climate change, and the environmental peacebuilding. Chapter 2 by James R. Lee examines the evolution of the environmental conflict as an area of research, while Peter Stoett's chapter (3) examines the importance of transnational environmental crime as an important environmental security threat. Simon Dalby in Chapter 4 discusses the global climate change and its implications for present and future environmental conflicts. Ken Conca and Michael D. Beevers in Chapter 5 analyze peacemaking potentials of environmental challenges, while Randall Amster's chapter (6) argues that though climate change poses existential threats, it also provides opportunity for environmental peacebuilding.

There are five chapters in Part II, Review of Thematic Approaches, which discusses issues concerning the type of natural resources, climate adaptation, technocratic approach and the role of the international organizations and their contributions to environmental conflicts and peacebuilding. Erika Weinthal and McKenzie Johnson in Chapter 7 examine the role of both renewable and non-renewable resources in contributing to different phases of the environmental conflict cycle and peacebuilding. Chapter 8 by Karin Aggestam critically analyzes the depoliticization of water resources and the preferred technocratic approach to use it for peacebuilding purposes. Richard A. Matthew's chapter (9) examines how and why climate change adaptation should be integrated into peacebuilding. David Jensen and Amanda Kron in their chapter (10) explore numerous entry points provided by natural resources for addressing risks and opportunities in conflict-affected environments, and highlight some of the ways in which the United Nations can contribute to peacebuilding at the local level. Chapter 11 by Peter Aldinger, Carl

Bruch, and Sofia Yazykova carefully analyzes the environmental and natural resources provisions in the UN Security Council Resolutions from 1946 to 2016.

Part III, Case Studies, carries seven chapters. While Tobias Ide, Vakur Sümer, and Larissa M. Aldehoff in their chapter (12) discuss environmental peacebuilding in the Middle East region, Hannah Moosa's chapter (13) analyzes environmental peacebuilding in Iraq and Anders Jägerskog's chapter (14) critically examines environmental peacebuilding through water cooperation in the Jordan basin. Michael D. Beevers's chapter (15) discusses environmental peacebuilding in Liberia; Florian Krampe's chapter (16) examines environmental peacebuilding from studying Nepal's micro-hydropower projects; Pedro Valenzuela and Servio Caicedo's chapter (17) discusses potential positive contributions of the 2016 Accord to address environmental problems in Colombia; and Colin Walch's chapter (18) is on how natural resource management has been a source of conflict and peace in the Philippines.

The final part of the handbook, Analytical Challenges and Future-oriented Perspectives, contains five chapters. Timothy Adivilah Balag'kutu, Jeremiah O. Asaka, Linda Holcombe, Jason J. McSparren, and Stacy D. VanDeveer in Chapter 19, through studying Kenya, suggest that there are many existing governance initiatives at local and other scales clearly engaging resource cooperation and institution-building which might teach us a lot about environmental peacebuilding across contexts. Maria Vink's chapter (20) explores the link between water diplomacy and peacebuilding; Dennis Tänzler's chapter (21) investigates how climate diplomacy can contribute to peace, while Saleem H. Ali and Rebecca Pincus in Chapter 22 examine the role of the military in conservation and peacebuilding. In the final chapter (23), Larry Swatuk critically reviews the potentials of environmental resource governance to achieve peace.

In all, we hope, these chapters will contribute to a comprehensive handbook that will remedy the neglect this field has hitherto experienced.

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